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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/361,458	07/27/1999	JONATHAN H. MEIGS	30-4590	5541

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RICHARD S. ROBERTS
ROBERTS & MERCANTI, L.L.P.
P.O. BOX 484
PRINCETON,, NJ 08542-0484

EXAMINER

EASTHOM, KARL D

ART UNIT	PAPER NUMBER
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2832

DATE MAILED: 11/23/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/361,458

Applicant(s)
Meigs et al.

Examiner
Karl Easthom

Art Unit
2832



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Sep 17, 2001
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 21-29 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 21-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other:

1. Claims 22-23 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no description of even dispersion of non-conductive particulate material evenly dispersed. In the conductive material where the latter is present in only .01%. That is, Fig. 9 indicates that the conductive material predominates for this type of even dispersion.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

3. Claims 1-11 and 21-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Hunt et al. Hunt discloses the claimed invention at the abstract and cols. 22-24, see col. 24, lines 44-50 for the nonconductive particulate material (eg. alumina). In claims 6-7, 11, and 28-29, the foil is copper 403 at Fig. 5b, see col. 28, lines 34-43. In claims 3-10, copper and other metals are disclosed at col. 22. In claim 21, col. 22 discloses nickel. In claims 22-23, the range is met since the wt % is varied, see col. 25, lines 19-27.

4. Claims 1-2, 4-5, 22-23, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Tani et al. Tani discloses the claimed invention at col. 3 where the nonconductive particulate

frit contains alumina and is dispersed in the resistance material, see Table 1, col. 4. While other particulate matter is present, the term "consisting essentially of" is met absent other evidence.

5. Claims 1-5, 21-23, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Van Den Broek et al. Van Den Broek. discloses the claimed invention at cols. 1-2 with copper palladium and alumina for example. The CuNi meets claim 21

6. Claims 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al. Yamada et al. discloses the claimed invention at col. 15, lines 33-46, where copper foils are disclosed as an electrode, and the composite composition comprises alumina or zinc oxide or clay as a filler, col. 10, lines 26-37, and/or polytetrafluoroethylene, as the nonconductive particulate material, and the conductive material is carbon, col. 7. The laminate is disclosed at col. 8, lines 50-55. The copper foil is 1, see col. 15, lines 33-45, and is shiny

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6-11, 24-26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Broek et al. in view of either Clouser, Castonguay et al., or Lindblom et al. XP '182 discloses the claimed invention as noted above except for the foil comprising copper (claim 3 and others), and except for the conductive metal layer or multilayer foil (claims 6, 11 and others). Clouser (col. 1, lines 15-25, col. 4, lines 50-58, col. 5, lines 60-65 - noting nickel or copper foils), Castonguay et al. (col. 1, lines 10-21), or Lindblom et al. (col. 1, lines 12-25, col.

3, lines 40-52 - Invar having nickel)) disclose conventional circuit boards as laminates having conductive foils of nickel, copper, etc for the purpose of forming a circuit board with ready etching (see col. 1 of Castonguay et al.). It would have been obvious to form a circuit board as a laminate with a foil of any of the known conductors typically employed for the circuitry where Van Den Broek et al. discloses a resistive material of a high ohmic value, and Clouser discloses increasing resistance with additives at col. 4, lines 64-68, suggesting the need for high ohmic resistors for circuit boards.

9. Applicant's arguments filed 1/23/01 have been fully considered but they are moot. The removed rejections represent the response to persuasive arguments. As to claim 11 and Yamada et al., it is not seen how a polymer is precluded

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703) 308-3306. The examiner can normally be reached on M-Th from 6:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Gellner, can be reached on (703) 308-1721. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


KARL D. EASTHOM
PRIMARY EXAMINER